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# **Majority Governments and Investment: Evidence from Portuguese Municipalities**

Filipe Ramalho Bento Costa Caires

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**Professor Susana Peralta**

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# Majority Governments and Investment: Evidence from Portuguese Municipalities\*

Filipe Bento Caires<sup>†</sup>

## Abstract

Theory predicts that coalition governments spend more than majorities. Focusing on Portuguese municipal governments over the period between 1993 and 2012, we empirically investigate whether majorities invest less than coalition governments. Using a two step methodology which consists of exploring discontinuities in government type and comparing municipalities which changed their type of government around the discontinuity with those that did not, we are able to isolate a causal effect. Contrary to the theoretical predictions, we find that mayors that are able to hold a majority in the City Hall Council significantly increase their investment relative to those who are not. This result is in line with others in the empirical literature, such as Freier and Odendahl (2012) and Garmann (2014).

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<sup>†</sup>Nova School of Business and Economics. Campus de Campolide, P-1099-032Lisboa, Portugal. Email: [filipe.bento.caires@gmail.com](mailto:filipe.bento.caires@gmail.com).

# 1 Introduction

Democratic countries are most frequently governed by coalition governments than majorities. Seldom is being the most voted party equivalent to earning the majority of seats in the parliament, and to negotiate with other parties in order to establish a parliamentary majority is a necessary step towards government formation. Coalition governments bring the benefit of being more inclusive, as a larger number of different interest groups in the population is represented in the executive and policy-making is more easily moderated. However, a larger degree of heterogeneity in preferences of represented political forces and the polarisation of votes can make the process of forming a coalition extremely costly. The recent experiences of Spain and Holland are illustrative, and coalition negotiations in Germany have also recently started to complicate. Similarly, coalition executives might be faced with more burdensome negotiation processes which can delay and restrain policy adoption.

The relationship between governments and fiscal policy has been object of interest of vast theoretical and empirical research. The strategic use of fiscal policy tools to maximize re-election perspectives as well as its heterogeneous use related to ideological differences have been the main points of focus. However, governments often need to negotiate with coalition partners to conduct policy. We acknowledge the relevant differences between coalitions agreed pre-electorally, post-electorally and governments ruling under minority (Edin and Ohlsson, 1991) but our interest lies in whether a government has discretionary power or needs to undertake negotiation, and the term “coalition” should henceforth be understood as any form of government including more than a single party. The purpose of this work project is to investigate whether majoritarian governments change their fiscal behaviour when compared to coalitions. Particularly, does a majority status enhance or restrain spending?

The bulk of the literature stems from the theoretical models put forward by Weingast et al (1981) and Persson, Roland and Tabellini (2007). While the former presents a common pool problem with asymmetric perception of projects’ costs and benefits which induce over implementation and the latter highlights a vote seeking spending enhancing competition within the coalition, both lead to the general result that coalitions are expected to spend more. Empirical evidence, however, presents conflicting results and, crucially, often fails to properly address endogeneity issues in government type assignment.

The institutional homogeneity and data availability make portuguese municipalities an ideal setting to explore the question of whether coalitions spend more than absolute

majorities, despite the dominance of majoritarian governments. We focus on investment expenditures as these are less rigid than current expenditures and more often manipulated by governments (Veiga and Veiga, 2007a).

In order to explore exogenous variation in the majority status we develop a two-step methodology that explores discontinuities in the government type. City Hall Councils (*Câmaras Municipais*) are composed of an odd number of seats, and members are elected proportionally and allocated according to the D'Hondt method. Therefore, the ability to form a majority government changes discontinuously if the mayor's party is able to earn the last seat that allows him to control the majority of seats or not. I define the threshold as half of the total number of seats in the council and define municipalities "located around the threshold" to be those in which the most voted party has exactly the number of seats that guarantees majority (just majority) or one fewer seat than that (just coalition).

We analyse close elections by restricting the sample to just majorities and just coalitions and proceed by analysing transitions in the government type: comparing municipalities which changed their government type around the discontinuity threshold with municipalities that did not. Furthermore, we do so for municipalities with similar enough electoral outcomes so that observed differences can be attributed to the change in type of government and differences in government type attributed to randomness in voting behaviour.

Our findings show that, contrary to the theoretical prediction, majority governments spend more than coalitions. The result seems to be driven by increases of municipalities that become majorities and not by decreases in municipalities that become coalitions and political capital built by larger vote shares further enhances the effect. Preliminary analysis of an alternative methodology, a fuzzy regression discontinuity, confirms the direction of our results.

The remainder of this work project is organized as follows: Section 2 surveys the literature on the topic, Section 3 presents the institutional landscape and describes the data, while Section 4 discusses the methodology employed. Section 5 lays the preliminary facts, Section 6 presents and discusses the results. Section 7 briefly explores an alternative methodology and Section 8 concludes.

## 2 Literature Review

This work project intends to study the impact of the type of government (majority or coalition) on fiscal policy, namely investment. The topic has been object of considerable theoretical and empirical analysis, which we review in this section.

The seminal work of Weingast et al (1981) develops a common pool problem in which a higher number of decision-makers with different preferences induces over-spending and higher deficits. Persson, Roland and Tabellini (2007) also theoretically predict coalitions to spend more, identifying the difficulty of voters to attribute individual responsibility for decisions as a driver for an expenditure intensifying competition among the members of the coalition, while highlighting the endogenous role of the electoral rule.<sup>1</sup>

While both theoretical models predict that coalitions are expected to spend more than majoritarian governments, empirical evidence on the topic is mixed, as some studies argue the size of cabinet to be more important than coalition status or size (Perotti and Kontopoulos, 2002; Schaltegger and Feld, 2009) or that coalition governments do not affect expenditures (Baskaran, 2013).

Roubini and Sachs (1989a,b) confirmed the prediction that coalition governments are related to higher fiscal deficits, using data on OECD countries. Exploring different groups of countries, and despite some conflicting results, other cross-country studies have generally found positive impact of coalition governments (Persson et al, 2007) and government fragmentation (Perotti and Kontopoulos, 2002; Bawn and Rosenbluth, 2006), defined as the number of different parties in a coalition, on the deficit, expenditures and transfers.<sup>2</sup>

One relevant drawback of cross-country studies is the high degree of institutional heterogeneity which they need to address (Baskaran, 2013). In order to resolve the issue, some studies have focused on sub-national levels of government. Asworth and Heyndels (2005) study Flemish municipalities to find that coalition and cabinet size both drive spending increases. Borge (2005), investigating Norwegian local governments, finds that single-party majorities induce deficit reductions and Le Maux et al (2011) also find a positive link between the number of parties in a coalition and expenditures in the context of french *départements*.<sup>3</sup> Shcaltegger and Feld (2009) focus on Swiss cantons to argue that

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<sup>1</sup>In a coalition government, voters are not able to perfectly monitor which member is responsible for which decision. Politicians are election-oriented and voters reward or punish them at the polls. Persson, Roland and Tabellini (2007) show that the plurality rule favours majority formation and proportional rule favours coalition formation, relatively.

<sup>2</sup>Perotti and Kontopoulos (2002) explore a panel of 19 OECD countries, Bawn and Rosenbluth (2006) focus on 17 European countries and Persson et al (2007) study 50 parliamentary democracies.

<sup>3</sup>*Départements* are a sub-national division of territory in France.

coalitions may not matter for fiscal outcomes, pointing cabinet size as the main driver.

Importantly, it remains unsettled whether many of the previous studies have properly accounted for endogeneity issues (Garmann, 2014). Persson et al (2007) rely on IV estimation using the electoral rule as an instrument for the government type.<sup>4</sup> Garmann (2014) employs a Regression Kink Design (RKD) methodology in a panel of German municipalities, exploring the discontinuity in the probability to form a majority government around the 50% vote share threshold to isolate the causal effect of coalition governments on fiscal outcomes, finding majorities to spend more than coalition governments.<sup>5</sup> In line with these results, Artés and Jurado (2014) and Freier and Odendahl (2012) use regression discontinuity strategies to find, respectively, that in the context of Spanish municipalities majorities run higher deficits and in the context of German municipalities majorities increase spending and property tax rates.

Portuguese mayors have been found to strategically manipulate the timing and composition of public expenditure. Particularly, municipal governments significantly increase investment expenditures in pre-electoral and electoral periods, and more so in items that are highly perceivable by the electorate, such as roads. Furthermore, the magnitude of the manipulation does not seem to depend on the composition of the Municipal Assembly (Veiga and Veiga, 2007a). These findings largely support the existence of political business cycles (see Nordhaus, 1975 and Rogoff, 1990) which have been shown to yield enhanced electoral results for incumbent mayors running for re-election (Veiga and Veiga, 2007b).

Heterogeneous fiscal behaviours can also be linked to the ideological and partisan differences in political control of local governments (Pettersson-Lidbom, 2008, Ferreira and Gyourko, 2009). In the portuguese local context, left-wing governments favour the adoption of municipal corporate taxes and exhibit a predilection for social infrastructure investment whereas right-wing mayors tend to increase compensation of municipal workers and family subsidies (Migueis, 2012). Left-wing mayors exhibit a higher level of opportunistic behaviour (Veiga and Veiga, 2007a) and alignment with the central government increases transfers received by municipalities (Migueis, 2013).

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<sup>4</sup>Since the type of government is not exogenous to the electoral rule, the latter has an effect on spending that works via the government type and constitutes a valid instrument

<sup>5</sup>A possible strategy would be to follow Garmann (2014)'s approach and develop a Regression Kink Design around the 50% vote share threshold. However, the small number of seats in Portuguese local governments and the particularities of the D'Hondt method make it more likely that less populous municipalities have majorities. This makes it difficult to verify balancedness in municipalities' observables around the threshold. For this reason, we rely on an alternative methodology and provide preliminary evidence on the Regression Kink Strategy in Section 7. Balance tests on pre-treatment observables are available in the Appendix.

This work project adds to the existing literature concerning portuguese local governments, their use of fiscal policy instruments – namely spending – and ability to strategically manipulate them. It represents however, to the best of my knowledge, the first attempt to study the causal impact of majority governments on public investment in the context of portuguese municipalities thus contributing to the enrichment of the knowledge in the field.

### 3 Institutional Setting and Data Description

This study focuses on municipalities, the second level of decentralized government in Portugal, to assess the impact of majoritarian governments on fiscal policy. Each municipality is further divided into parishes (*freguesias*), the lower level of administration in Portugal. The average mainland municipality has 35890 inhabitants and an area of 32020 hectares.<sup>6</sup> For statistical stastistical purposes, municipalities are further grouped into 25 sub-national divisions called NUTS3.<sup>7</sup> Although there is a total of 308 municipalities in Portugal, due to relevant differences between the governance of the autonomous regions of Azores and Madeira and the remaining of the country, we focus on the 278 municipalities located in the mainland, which we analyse over the 1993-2012 period. The period includes 5 electoral terms of 4 years each.<sup>8</sup>

The decentralization of powers in Portugal aims at fostering the efficiency in supply of local public goods and promoting regional development, according to the principle of subsidiarity. Municipal governments have jurisdiction over planning, administration and investment in a wide range of services such as energy and water supply, education or health.<sup>9</sup> Furthermore, they have autonomy, within centrally defined intervals, to set different tax rates: a municipal contribution in the IRS (personal income tax), which is a share of personal income tax the municipal government can return to the taxpayer, a property tax (IMI) levied on real estate value and a tax on corporate profits (Derrama) as well as miscellaneous fees related to the private use of public services or spaces.<sup>10</sup>

Municipalities receive conditional and unconditional transfers from the central government and the European Community, distributed by different social funds according to multiple demographic and socioeconomic criteria or depending on project approval.

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<sup>6</sup>Population data refers to the last year in our dataset, 2012. Source: Statistics Portugal and POR-DATA.

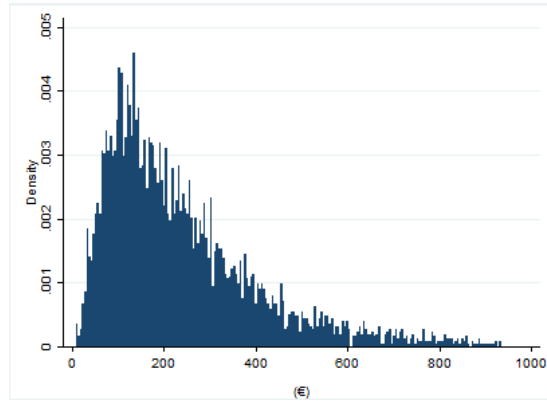
<sup>7</sup>There are 23 NUTS3 in the mainland and Azores and Madeira constitute one NUTS3 each.

<sup>8</sup>The last electoral term considered is 2010-2013. However, for data availability reasons, the last year is not considered.

<sup>9</sup>Law n 159/99 of September 14th

<sup>10</sup>IRS - Imposto sobre o Rendimento de Pessoas Singulares. IMI - Imposto Municipal sobre Imóveis.

Figure 1: Investment *per capita* Distribution



Source: DGAL. Investment Expenditures for all mainland municipalities between 1993 and 2012.

Own funds include tax revenues, the collection of fines and fees and the proceeds from the municipalities' activities (sale of property, rents and concessions).<sup>11</sup>

Local governments have considerable freedom in their spending decisions. In this study, we analyse investment expenditures as they are more volatile and more easily manipulated by the executive than current expenditures, since the latter include salaries as well as other more rigid expenditures related to the municipalities operations (Veiga and Veiga, 2007a). Investment expenditures are divided into land, housing and other buildings, transportation material, machinery equipment, other investments and miscellaneous construction including sewage, water distribution and roads and streets construction among others. Fiscal data are made available to the public by the General Directorate for Local Authorities(DGAL).<sup>12</sup>

Figure 1 shows the distribution of *per capita* investment, revealing considerable right skewness. Wooldridge (2000) suggests that taking natural logs of strictly positive dependent variables can solve problems of skewness and heteroskedasticity. In our sample, *per capita* investment is strictly positive. As such, we consider its natural log in our analysis.

The municipal government is composed of a legislative branch, the Municipal Assembly (*Assembleia Municipal*), and an executive one, the City Hall Council (*Câmara Municipal*), independently elected every four years. Parties, pre-electoral coalitions and independent groups of citizens can compete in local elections. In addition, a Parish Assembly (*Assembleia de Freguesia*) is also elected and the elected president of each parish also holds seat in the Municipal Assembly, which is formed by these and by the directly elected members.

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<sup>11</sup>Law No 73/2013, of September 3rd (current version).

<sup>12</sup>*Direção Geral das Autarquias Locais*; <http://www.portalautarquico.pt>



Table 1: Absolute Majorities

	1994-1997	1998-2001	2002-2005	2006-2009	2010-2012
Nr	207	247	244	252	252
%	75,3%	89,8%	87,8%	90,6%	90,6%

Source: Author's using data from CNE.

The City Hall Council is elected proportionally, with votes converted into seats through the D'Hondt method. The mayor is the head of the most voted electoral list and the Council further includes 4 to 16 alderman, depending on the municipal population. The D'Hondt method favours larger parties' representation, increasing the likelihood of majority formation (see Section 4). Accordingly, portuguese local political landscape has been dominated by majorities in City Hall Councils. Table 1 summarizes the relative presence of majorities in portuguese municipalities over the analysed period. Throughout the years, between 75% and 91% of municipalities were ruled by majoritary governments.

The local governance of portuguese municipalities has been historically dominated by the center-left PS (*Partido Socialista*) and the center-right PSD (*Partido Social Democrata*), the two parties with larger representation in national parliament, although a relevant share of municipalities has been under the government of the left-wing party PCP (*Partido Comunista Português*). Seldom did the left wing BE (*Bloco de Esquerda*), the right-wing CDS-PP (*Centro Democrático Social - Partido Popular*), other smaller parties or independent groups of citizens earn the majority of seats in the City Hall Council. Henceforth, Right-Wing (RW) parties refers to PSD and CDS-PP while Left-Wing (LW) parties refers to PS, BE and PCP.<sup>13</sup>

The mayor and the City Hall Council it leads are responsible for designing policies and budgets and, following the literature (Veiga and Veiga ,2007a, Lopes da Fonseca, 2016), will be gennerally looked at as the relevant decision-making level of government. In order to address the fact that there are several possible combinations of majority and non-majority in the Council and the Municipal Assembly and that policy adoption depends on Assembly approval, we depart from Lopes and Peralta (2016) municipal adaptation of Tavares (2014) *Ideological Complexion of Government and Parliament*, the *Ideological Complexion of Municipal Executive and Council Index (ICMEC)* to build a control for this factor in our study - which we call *index*. The ICMEC's purpose is to capture the ideological composition of government in both bodies, and ranges from 1 to 5 in the following way:

If RW parties hold majority of both Council and Assembly the ICMEC takes the value

<sup>13</sup>Smaller parties and independent groups of citizens are considered neither.

1. If RW holds majority of either body it takes value 2. Value 3 means no majorities are held. The ICMEC assumes value 4 if LW mayor has majority in Council or Assembly and 5 if holds majority in both bodies.

Accordingly, our binary variable *index* takes value 1 when the ICMEC takes values 1 or 5, capturing municipalities where there is an ideological majority in both bodies.

Political and electoral data, including contestants, vote shares and seats earned are published by the National Electoral Commission (CNE), the entity responsible for regulating the electoral process.<sup>14</sup> As elections take place towards the end of the year, elected governments are assumed to be responsible for fiscal outcomes starting the year after the election took place.<sup>15</sup>

Other demographic and geographic data are used as additional controls and chosen in light of the literature review. Total consumption of energy is included to control for the municipalities' socioeconomic activity. Control data are taken from miscellaneous sources such as Statistics Portugal (INE), PORDATA and General Directorate for Energy and Geology (DGEG).<sup>16</sup> Table 2 summarizes the variables included. *Marktest Sales Index* compiles the information from the above sources and was used as a complementary tool for data collection.

Our analysis relies on a procedure which involves restricting the sample to those municipalities where the mayor holds just enough seats to have majority in the City Hall – which we call “Just Majority” – and those municipalities where the mayor’s party earned exactly one seat less than that – which we call “Just Coalition” (see Section 4). Table 2 also presents the summary statistics for the restricted sample.

## 4 Methodology

The causal effect of the type of government on public investment could be basically described by the following relation:

$$Y_{it} = \alpha + \beta_1 M_{it} + \delta' X + \gamma_t + \gamma_{NUTS3} + \epsilon_{it}, \quad (1)$$

where  $Y_{it}$  is the natural logarithm of *per capita* investment of municipality  $i$  in period  $t$ ,  $M_{it}$  a dummy variable indicating an absolute majority government and  $X$  a vector of demographic, geographic, political and socioeconomic controls. The terms  $\gamma_t$  and  $\gamma_{NUTS3}$

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<sup>14</sup>Comissão Nacional de Eleições (<http://eleicoes.cne.pt/>)

<sup>15</sup>Considered elections took place in 12/12/1993, 14/12/1997, 16/12/2001, 09/10/2005 and 11/10/2009.

<sup>16</sup>PORDATA – <https://www.pordata.pt/>; *Direção Geral de Energia e Geologia* – <http://www.dgeg.gov.pt/>; *Instituto Nacional De Estatística* – <https://www.ine.pt>.

Table 2: Summary Statistics

	Full Sample				Restricted Sample			
	Mean	Std Dev	Min	Max	Mean	Std Dev	Min	Max
<b>Ln(Investment <i>per capita</i>)</b>	5.259	0.73	2.19	7.43	269	170.6	10.2	909.81
<b>Total Population</b>	35469.9	57119.9	1782	629361	31536.2	56241.1	1782	553646
<b>Population Share 65+</b>	0.21	0.07	0.07	0.44	0.23	0.07	0.09	0.44
<b>Area (10 000 ha)</b>	3.202	2.835	0.0826	17.207	33.73	29.35	0.826	172.067
<b>Coastal</b>	0.20	0.40	0	1	0.20	0.40	0	1
<b>Left-Wing Government</b>	0.5	0.49	0	1	0.54	0.49	0	1
<b>Right-Wing Government</b>	0.42	0.49	0	1	0.44	0.49	0	1
<b>Alignment with Central Government</b>	0.41	0.49	0	1	0.42	0.49	0	1
<b>Number of Seats in Council</b>	6.72	1.45	5	17	6.58	1.70	5	17
<b>ICMEC</b>	3.16	1.89	1	5	3.26	1.83	1	5
<b><i>index</i></b>	0.87	0.34	0	1	0.82	0.38	0	1
<b>Energy Consumption (1 000 000 kWh)</b>	139.22	275.74	1.678	3468.48	137.65	280.40	2.23	3468.48
<b>Observations</b>	5536				2437			

Sources: Investment per capita taken from DGAL. Total population, share of population above 65 and area taken from INE. Political Data are taken from CNE. ICMEC from Lopes and Peralta (2016), *index* is author's using data from ICMEC. Energy Consumption from DGEG. Sources and links further detailed in Section 3. Full Sample includes all mainland municipalities from 1993 to 2012. Restricted Sample includes all municipalities where the mayor's party eared for two consecutive electoral periods just enough seats to have majority in the Council or exactly one seat fewer than that.

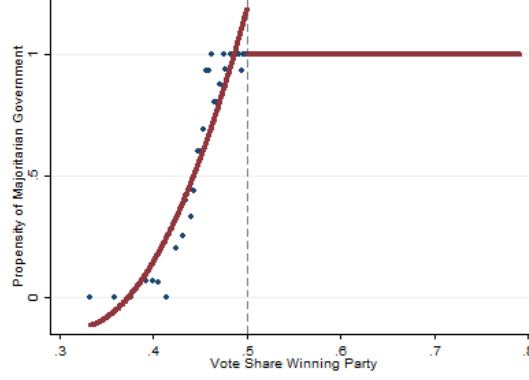
represent year and NUTS3 fixed effects to control for aggregate time and geographical shocks while  $\epsilon_{it}$  is the error term.

One important issue is that the government type might be influenced by fiscal decisions. Politicians value holding office and use the tools at their disposal in order to pursue that objective. As stressed by Veiga and Veiga (2007a), portuguese mayors strategically manipulate their expenditures in order to maximize their re-election perspectives. Furthermore, parties have heterogeneous interests in controlling different municipalities, and the multitude of relations between political forces affects both the election outcomes and the fiscal choices once the governments are formed. Not all municipalities are equally likely to be governed by a majority government and that fact by itself is probable to influence investment choices. Specific characteristics of municipalities thus influence both the fiscal outcome we intend to analyse and the form of government that vigours. These mechanisms clearly point that issues of reverse causality and ommited variable bias are likely to threaten the validity of a simple OLS regression of equation 1.

In order to explore how exogenous variations in government type affect municipal investment, we use a two-step methodology: first, we explore close elections and rely on the fact that there are known discontinuities in the type of government (majority *vs* coalition) to restrict our analysis to municipalities “located” around the discontinuity thresholds. Second, following the intuition of a double difference, we explore what we call “transitions”.

The direct determinant of the resulting type of government are the votes each party receives. As such, the vote share earned by the winning party could potentially constitute

Figure 2: “The Kink” - Vote share of vs Frequency of Majority



Source: Author's using data from CNE. Majority takes value 1 if most voted party holds majority of seats in City Hall council. Dots represent within bin averages of majority status by vote share. Lines are two quadratic fits with a discontinuity at 50% voteshare

a source of government type discontinuities and variation. One feature of the D'Hondt seat allocation method, especially when allocating over a reduced number of seats, is that parties receiving as low as 40% of the vote total can earn the absolute majority of the seats in the Council. All parties receiving at least 50% of the vote share guarantee a seat majority, but below the 50% vote share the ability to form a majoritarian government is increasing in the vote share. As Figure 2 clarifies that there is no sharp discontinuity in treatment status around the 50% vote share threshold, so we focus on seats earned instead.<sup>17</sup> However, the observable kink in the probability of treatment (majority) at the 50% threshold motivates a regression kink type of analysis in the spirit of Garmann (2014), as discussed in Section 2. This possibility is explored preliminarily in Section 7.

The difference between becoming a majoritarian or a non-majoritarian government lies exactly in whether or not the most voted party is able to earn the last seat that allows it to control the majority of seats (The discontinuity threshold). As such, we restrict our analysis to municipalities where the most voted party was able to earn the exact number of seats needed to hold majority in the City Hall Council (“Just Majority”) or earned exactly one fewer seat (“Just Coalition”), and refer to municipalities in these categories as “located around the discontinuity threshold”.

As the majority status of governments around the discontinuity threshold is defined by the allocation of one seat, our claim is that the number and combination of votes determining allocation of this last seat can be attributed to randomness in voting be-

<sup>17</sup> “Sharp Discontinuity” is standard name in the literature for when the probability of treatment jumps from 0 to 1 at the discontinuity.

haviour. In fact, the same share of votes that can result in a just majority in a specific municipality might result in a just coalition in another, depending on the number of seats and the combination of votes among the remaining contestants.

For clarity, we introduce some notation. Let  $N$  be the number of seats available in the City Hall Council of a given municipality,  $n$  be the number of seats earned by the most voted party and  $\text{int}(x)$  represent the closest integer larger than  $x$ . Furthermore, let  $M$  denote a just majority and  $C$  be an indicator for a just coalition, such that:

$$\begin{cases} M_t = 1, & \text{if } n = \text{int}(N/2) & \text{in year } t \\ C_t = 1, & \text{if } n = \text{int}(N/2) - 1 & \text{in year } t \end{cases}$$

We acknowledge that there might be relevant differences in coalitions agreed pre-electorally, post-electorally and governments ruling under minority (Edin and Ohlsson, 1991). Our interest, however, lies in whether a government has discretionary power or needs to undertake negotiation, and so we explore no further distinction between coalition types and call just coalition to any form of government where the mayor's party holds one seat fewer than she would need to hold majority (Garmann, 2014).

This strategy has a potential drawback due to the prevalence of pre-electoral coalitions of the right wing parties PSD and CDS-PP that won elections, which makes it non-negligible to include them in the just majorities if our interest truly lies in whether a party needs to undertake negotiation or not. Throughout the period, 34 municipalities were just majorities under the control of pre-electoral coalitions of PSD/CDS-PP. In order to address this issue we generally consider these cases as just coalitions. We also present the results for the main specification when we exclude these municipalities from the sample (see Section 6). Table 2 also presents the summary statistics for the restricted sample.

After identifying municipalities around the discontinuity threshold, we explore what we have named "transitions". Particulary, we compare those municipalities that, in an election, change from being just majorities to being just coalitions – which we name  $MC$  – with municipalities that are just majorities and remain so after the election –  $MM$ . We apply the same exercise to municipalities that were just coalitions and became just majorities –  $CM$  – comparing them with municipalities that were just coalitions and so remained –  $CC$ .

Formally, let  $t$  denote a year and  $t - 4$  denote the period 4 years before  $t$ , capturing the government type of the municipality in the previous electoral period. The sample is restricted to municipalities located around the discontinuity threshold in both  $t$  and  $t - 4$ ,

and modify equation 1 as follows:

$$Y_{it} = \beta_0 + \beta_1 M_{it-4} + \beta_2 M_{it} + \delta' X + \gamma_t + \gamma_{NUTS3} + \epsilon_{it}, \quad (2)$$

By comparing municipalities that changed their government type around the discontinuity threshold with municipalities that did not, the differences, if existent, can be attributed to the government type variation and a causal effect be derived.

In equation 2 our parameter of interest is  $\beta_2$ . To understand why, consider first a municipality  $MC$ , i.e., one that transitions from just majority to just coalition. The total effect is given by  $\beta_0 + \beta_1$ . If we consider a municipality  $MM$ , the total effect is  $\beta_0 + \beta_1 + \beta_2$ . Comparing municipalities that depart from the same initial situation of being just majorities, the effect of remaining a just majority as opposed to becoming a just coalition is given by  $\beta_2$ . If we replicate the exercise for municipalities that depart from being just coalitions, we easily see that the effect of being a  $CC$  municipality is given by  $\beta_0$  while that of being a  $CM$  municipality is  $\beta_0 + \beta_2$ . Again, the difference of becoming a just majority compared to remaining a just coalition is given by  $\beta_2$ .

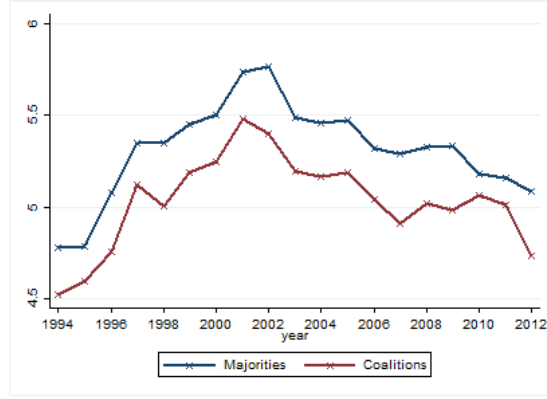
Our methodology combines features of a regression discontinuity, in that we explore the discontinuity in the type of government to restrict our sample, with features of a Difference-in-Differences (DiD), in that we compare outcomes of municipalities which changed their government type over an election with municipalities that did not. However, there are relevant differences between our methodology of transition analysis and a DiD. In our methodology, the treatment and control group are not constant through time and comparisons are made over several elections, not a single event. Some municipalities change their government type throughout the period and can be part of the treatment group (one that transitions to a just majority) in one period and control (one that does not) in another.

## 5 Preliminary Facts

The evolution of *per capita* investment (in natural logarithm) by government type can be analysed in Figure 3. Majority governments seem to spend more than coalition governments over the whole period. The fact that majorities spend constantly more through time despite the group composition effect also points to larger spending by majorities.

In order to understand whether or not it is the majority status of a government that impacts investment and not the vote share received by the winner party, Figure 4 plots

Figure 3: Investment *per capita* by Government Type



Source: Author's using data from DGAL. All mainland municipalities included. Investment per capita in natural log. Groups composition changes in 1999, 2002, 2006 and 2010.

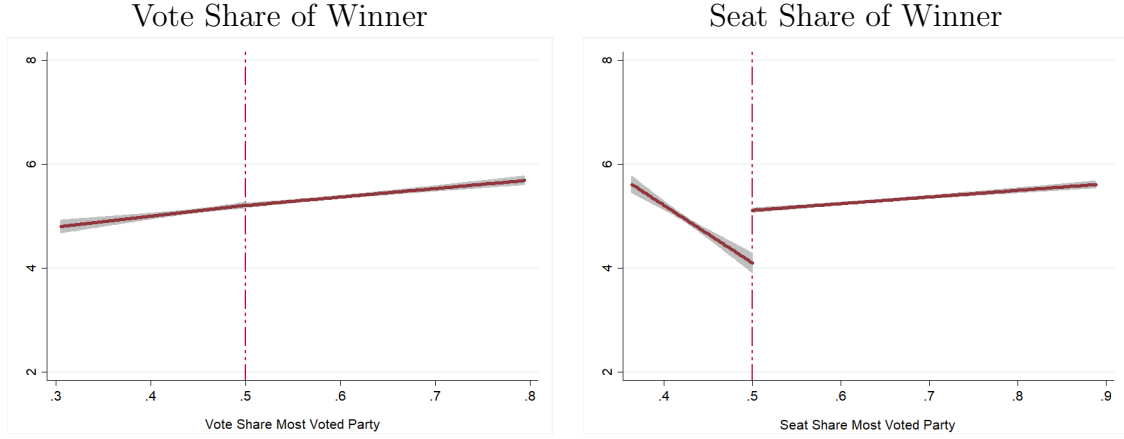
both measures against the *per capita* investment (in natural log), showing linear fits below and above the 50% threshold. While the investment seems to continuously increase along the vote share, we observe a clear discontinuity – increase – in the outcome around the 50% seat share threshold, where government type changes. Both facts further support the existence of a causal positive effect of absolute majorities on investment and validate the exploration of the seat discontinuity.

Despite the observable discontinuity, there is a clear decreasing pattern to the left of the 50% seat threshold. The confidence intervals are larger towards both ends of the left-hand side linear fit, suggesting that a reduced number of observations might be driving that result. Furthermore, the decreasing pattern suggests that there might be a non-monotonic effect of majoritarian governments on investment. The outcome driving mechanisms may vary with different relations of political forces and the resulting outcome may be different in coalitions where the most voted party has more or less relative importance within the coalition. While the hypothesis is interesting, to explore it lies beyond the scope of this study. Since our analysis and conclusions are local in that they are restricted to municipalities around the discontinuity threshold, this fact poses no threat to our strategy.

## 5.1 Possible Confounding Factors

Some concerns must be addressed when restricting the sample as described in Section 4. One of those is that “transitions” may be geographically concentrated. If that is the case, the results could be expressing local effects other than the type of government.

Figure 4: Discontinuity Analysis



Source: Author's using Data from CNE and DGAL. Investment per capita in natural logarithm. Grey shadows represent 95% confidence intervals of the linear fits. Left panel plots the per capita investment (in natural log) against the vote share of the most voted party and the right panel against the corresponding seat share

Figure 5 maps each of the transitions occurred in the 2009 election, the most recent in the sample, highlighting the municipalities that belong to the specified group.<sup>18</sup> There is no evidence of systematic geographical concentration in any transition and the maps further emphasize the dominance of majoritary governments in portuguese municipalities. In order to further control for local effects, all our regressions include NUTS3 fixed effects.

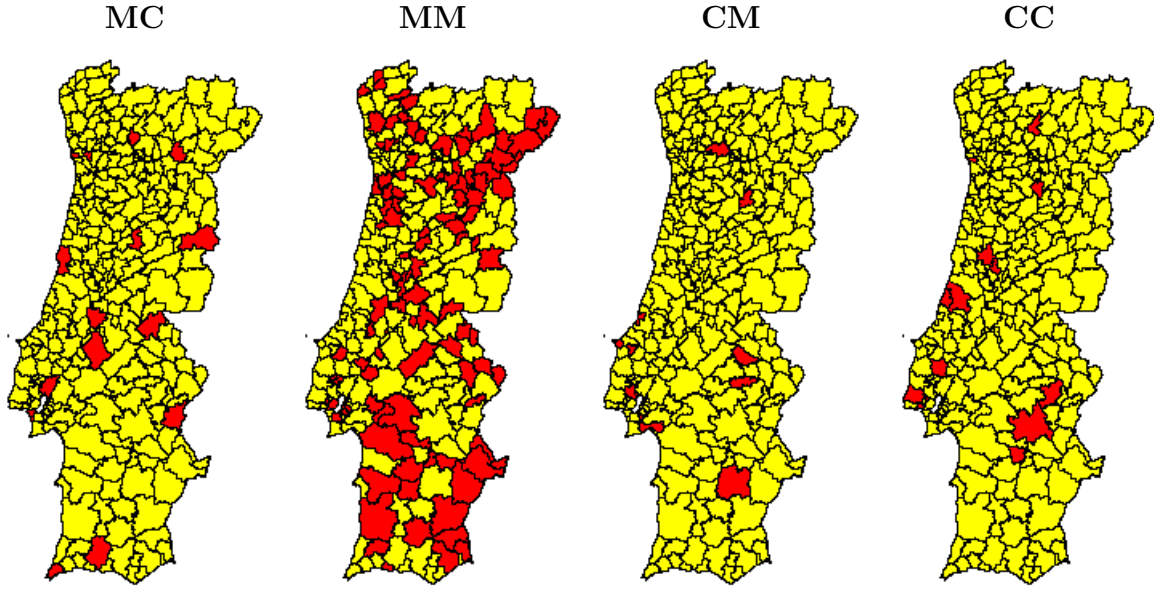
A second concern is that the majoritarian governments included in the restricted sample are highly unbalanced *vis-à-vis* the political spectrum and that results are driven by political ideology instead of government type. Table 3 exhibits the number of *M* and *C* governments, total and by ideology. There is a relatively higher presence of Left-Wing majoritarian governments while just coalitions are balanced. However, a t-test for the means shows that in our sample Left-Wing governments invest significantly less (around 3,6%) than the remaining. If the majoritarian government's impact on investment is confirmed to be positive, the ideological bias plays no role in that effect. Furthermore, Right-Wing majorities increase their investment relative to non-majorities more than Left-Wing majorities do. If anything, a positive impact would be understated. Nevertheless, government's ideology is controlled for in every regresion.

Table 4 shows the frequency of each type of transition, revealing that the number of changes in the type of government is low relative to municipalities which maintain their government type, which can potentially limit our ability to explore the government variation effect. The dominance of majorities is again evident with the number of MM being clearly dominant and with transitions from *C* to *M* outnumbering the opposite

<sup>18</sup>No spacial bias was identified in any of the elections, 2009 is representative and shown as an example.



Figure 5: Geographic distribution of transitions - 2009 Elections



Source: Author's using data from CNE. Each map highlights the municipalities that made the respective transition. Transitions: MC – From just majority to just coalition. MM – From just majority to just majority. CM – From just coalition to just majority. CC – From just coalition to just coalition.

Table 3: *M* and *C* Governments

	1998-2001		2002-2005		2005-2009		2010-2012		Total	
	M	C	M	C	M	C	M	C	M	C
LW	88	14	61	20	76	10	72	15	297	59
RW	59	9	61	19	53	20	48	14	221	62
Total	148	23	122	40	131	32	120	31	521	126

Source: Author's using data from CNE. M – just majority. C – just coalition.

Table 4: Transitions

	MC	MM	CM	CC
1998-2001	9	109	39	14
2002-2005	33	107	15	7
2006-2009	13	113	18	19
2010-2012	19	105	15	12
Total	74	434	87	52

Source: Author's using data from CNE. M – just majority. C – just coalition. CC, CM, MC and MM – transitions over the conditions defined before.

variation.

The vast majority of municipalities stays a just majority through the elections and only around 25% of the municipalities we follow make any transition. Furthermore, some municipalities are only part of our sample for a limited period of time while others enter and leave the sample more than once during the period, further limiting the exploration of the time dimension. Since we are looking solely at those located around the discontinuity threshold, municipalities where the winning party is able to earn more comfortable majorities or forms coalition governments where to win one more seat would still not guarantee a majority leave our sample. By the same token, if they return in any future election to the condition of just majority or just coalition transitioning from one of those conditions in the previous electoral period, they appear in our sample again. The fact that we are analysing a unbalanced panel where there is little within variation justifies our decision not to employ individual fixed effects and pool our data instead.

The valid derivation of a causal effect from the analysis of transitions relies on the assumption that municipalities that change government type are similar to municipalities that maintain their government type. If they are not, in order to validate the claim that the effect is driven by the government type variation we need to control for differences in baseline covariates so that, conditional on those differences, the actual effect can be assessed. Table 5 presents the means and mean differences for the baseline covariates across compared groups.

## 6 Results

Table 6 presents the results of the main econometric approach expressed by equation 2. Columns (1) and (2) present basic results excluding and including year and NUTS3 fixed effects while column (3) exhibits our main equation, including the full set of controls.

Contrary to the theoretical prediction, parties that are able to earn the decisive seat

Table 5: Balance Tests

	<i>Just Coalitions in previous election</i>			<i>Just Majorities in previous election</i>		
	<i>CC</i>	<i>CM</i>	<i>Difference</i>	<i>MC</i>	<i>MM</i>	<i>Difference</i>
Total Population	73373.35	34998.61	38374.73***	40790.70	24229.85	16560.83***
Population Share 65+	0.194	0.219	-0.025***	0.220	0.236	-0.015***
Area (10 000 ha)	2.65	3.64	-0.99***	3.66	3.36	0.30
Coastal	0.33	0.29	0.04	0.25	0.16	0.09***
Left-Wing Government	0.46	0.53	-0.06	0.46	0.57	-0.11***
Right-Wing Government	0.50	0.47	0.03	0.50	0.42	0.08**
Alignment with Central Government	0.25	0.39	-0.14***	0.44	0.45	-0.00
Energy Consumption	3.47	1.65	1.82***	1.91	0.98	0.94***
Observations	196	333		277	1631	

C – just coalition. M – just majority. CC, CM, MC and MM – transitions over the conditions defined before. Values are electoral term averages for a municipality over an electoral term in which it qualifies as belonging to that transition. Left-Wing: Mayor belongs to PCP, BE or PS. Right-Wing: Mayor belongs to PSD or CDS-PP. Independent groups of citizens and smaller parties are considered neither. Significance levels: 1%\*\*\* 5%\*\* 10%\*

*Example:* Municipality A has been a just majority over the 1994-1997 and over the 2002-2005 electoral terms and a just coalition over the 1998-2001 electoral term. The average value for covariate X for municipality A over the years 1998-2001 would be considered under MC and the average value for covariate X in municipality A over the period 2002-2005 is considered under CM.

in the Council and become a just majority seem to increase the government's investment relative to those who are not. The result is statistically significant and economically relevant. To be a just majority induces an investment increase of around 10% relative to just coalitions, on average. Taking the mean municipality in our sample, this represents around €500000 (or €30 per capita) per year. Coefficients on the treatment are positive and statistically significant across all specifications. The inclusion of demographic, geographic, political and socioeconomic controls significantly increases the explanatory power of the model and decreases the magnitude of the majority government effect.

A more aged population also increases municipal investment, as the need for better accesses and overall infrastructures becomes of higher importance. A higher number of alderman in the council is associated with lower levels of investment, pointing to the hypothesis that a larger cabinet may induce more burdensome negotiation processes which block investment levels. By the same token, just coalitions may also incur more in investment restraining negotiation processes and it may be part of the explanation for why just majorities spend more.

Column (4) investigates whether the results are driven by the largest cities and excludes the top 1% most populous cities.<sup>19</sup> The point estimate decreases but remains statistically significant suggesting that largest cities might have an effect but are not the main drivers of the effect.

The positive significant coefficients on column (4) together with the discussion in Section 5 regarding ideological prevalence and negative coefficients on Left-Wing governments show that results are not driven by large cities nor ideology but in fact by the government type. Furthermore, it is worth noting that the *index* is not significant in any of the spec-

<sup>19</sup>Lisboa, Sintra, Vila Nova de Gaia e Porto.

Table 6: Majority Government Effect: Regression Results

$\ln(Investment_{pc})$	(1)	(2)	(3)	(4)	(5)
$M_t$	0.268*** (0.073)	0.197*** (0.056)	0.102** (0.048)	0.083* (0.047)	0.091* (0.054)
Demographic Controls	-	-			
Pop Total			-0.003**	-0.002	0.011
Pop Share 65+			2.81***	2.44***	2.79***
Geographic Controls	-	-			
Area			-0.005	-0.002	-0.005
Coastal			-0.195**	-0.189**	-0.175**
Political Controls	-	-			
Left Wing			-0.070	-0.011	-0.195**
Alignment w/ Central Gov			0.045	0.049*	0.055*
Index			0.012	-0.016	-0.002
Nr of Seats in Council			-0.103***	-0.099***	-0.107***
Socioeconomic Controls	-	-			
Energy Consumption			0.044**	0.016	0.032*
Year FE	-	Yes	Yes	Yes	Yes
NUTS3 FE	-	Yes	Yes	Yes	Yes
Observations	2407	2407	2407	2382	2282
$R^2$	0.04	0.3636	0.4746	0.4599	0.4508

**Notes:** Standard Errors clustered at the municipality level reported in parentheses for the coefficient of interest. Observations above the 99th percentile of the dependent variable were dropped. 237 clusters in columns (1) to (3), 234 in column (4) and 232 in (5). Column (4) excludes top 1% more populous municipalities. Column (5) excludes pre-electoral coalitions from the analysis. Significance levels: 1%\*\*\* 5%\*\* 10%\*

ifications in which it is included, supporting our claim that the City Hall Council can be validly regarded as the relevant level of local government.<sup>20</sup>

Column (5) shows the results when we exclude pre-electoral coalitions from our sample. The coefficient loses significance as expected since excluding these observations results in less government type variation available for analysis. Nevertheless, estimates are positive, economically and statistically significant, validating our results.

## 6.1 Robustness and Extensions

Figure 6 exhibits the distribution of vote shares in the restricted sample and makes it evident that despite the previous exercise we can still be comparing municipalities where the most voted party obtained slightly above 30% of the votes with municipalities in which the most voted party earned around 70% of the votes.

In order to assess the robustness of our result, we further restrict the sample to those municipalities in which the winning party received between 40% and 60% of the votes so

<sup>20</sup>*index* is the indicator for ideological majority in City Hall Council and Municipal Assembly, built from the ICMEC (Lopes & Peralta, 2016). See section 3 for further detail.

Figure 6: Vote Share of Winning Party Distribution

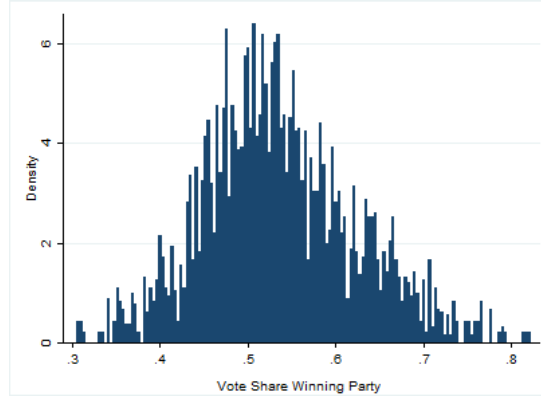


Table 7: Extensions

	(1)	(2)	(3)	(4)
<i>Vote Share Bandwidth</i>	40%-60%	42%-58%	45%-55%	<i>Full</i>
$M_t$	0.129** (0.055)	0.116* (0.062)	0.113 (0.082)	
$M_t * VoteShare_{it}$	0			0.798* (0.475)
$M_t$				-0.297
Observations	2194	2021	1553	2437
Clusters	234	232	213	237

**Notes:** All regressions include year and NUTS 3 fixed effects as well as the full set of demographic, geographic, political and socioeconomic controls. Standard Errors clustered at municipality level reported in parentheses for the coefficient of interest. Observations above the 99th percentile of the dependent variable were dropped. Significance levels: 1%\*\*\* 5%\*\* 10%\*

that we can compare municipalities similar enough in terms of both electoral outcomes – seats and votes. To reduce the vote share bandwidth further supports the claim that the just majority status can be attributed to random voting behaviour, as vote outcomes between compared municipalities are also similar. Table 7 shows the results. Columns (2) and (3) show the results of reducing the vote share bandwidth to 42%-58% and 45%-55%, respectively. Restricting the sample to closer elections increases the estimate without harming statistical significance (column (1)), and confirms the result that to be a just majority positively impacts investment. However, Columns (2) and (3) demonstrate that as we reduce the bandwidth, the number of transitions we are able to analyse also decreases and the econometric analysis eventually becomes non-significant.<sup>21</sup>

As Figure 2 demonstrates, below the 50% vote share threshold the propensity to form a majoritarian government is an increasing function of the vote share earned by

<sup>21</sup>Analysing bandwidth 45%-55%, where statistical significance is lost, represents dropping 17%, 29%, 67% and 79% of CM, MM, MC and CC transitions, respectively.

the most voted party. We try to assess whether the additional “political capital” held by majoritarian governments who received higher vote shares allows them to increase investment more than municipalities who earned majority with lower vote shares – the intensity of treatment. To do so, we interact the vote share of the most voted party with the treatment of interest  $M_t$  and estimate the following equation, where the interaction is added to equation 2:

$$Y_{it} = \beta_0 + \beta_1 M_{it-4} + \beta_2 M_{it} + \beta_3 M_{it} * VoteShare_{it} + \delta' X + \gamma_t + \gamma_{NUTS3} + \epsilon_{it}, \quad (3)$$

Column (4) of Table 7 presents the results of estimating equation 3 on the sample around the discontinuity threshold.

The result is statistically significant and large in magnitude. However, one needs to note that the coefficient on  $M_t$  has become negative, and the total effect is given by  $\beta_2 + \beta_3$ , which is positive.<sup>22</sup> The result points that a larger political capital earned at the polls backs additional investment increases by more comfortable majorities relative to weaker majorities.

Finally, in our baseline equation  $\beta_2$  captures the effect of two different transitions – to become a just majority from being a just coalition ( $CM$ ) and to remain a just majority as opposed to becoming a just coalition ( $MM$ ). In order to test if any of the transitions drives the effect (or both), we estimate equation 2 separately for municipalities that were just majorities and those that were just coalitions in the previous electoral period. Table 8 lays the results, which show a large significant effect of those becoming just majorities and an insignificant effect on those remaining so, suggesting that the main driver of the increase are those municipalities that change from being just coalitions to being just majorities. Although the small number of  $MC$  transitions for comparison may harm statistical significance of the  $MM$  coefficient and drive its insignificance, the point estimate is still very low when compared to that of  $CM$ 's.

## 7 Alternative: The Fuzzy Regression Discontinuity

Following Garmann (2014), we explore an additional strategy to derive a causal effect and given Figure 2, we explore a Fuzzy Regression Discontinuity (FRD) setting (or Regression

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<sup>22</sup>The total effect  $\beta_2 + \beta_3$  is positive for vote share values above 37%. The majority with lower vote share has earned 39,9% of votes and the mean value is of 52%, confirming the total effect to be strictly positive.

Table 8: The Driver: CM or MM?

	<i>Previous Just Coalitions</i>	<i>Previous Just Majorities</i>
$M_t$	0.165** (0.083)	0.048 (0.058)
Observations	527	1880

**Notes:** All regressions include year and NUTS 3 fixed effects as well as the full set of demographic, political and socioeconomic controls. Standard Errors clustered at municipality level reported in parentheses for the coefficient of interest. 90 clusters in (1) and 220 in (2) Observations above the 99th percentile of the dependent variable were dropped. Significance levels: 1%\*\*\* 5%\*\* 10%\*

Kink Design (RKD)).<sup>23</sup>

As Imbens and Lemieux (2008) emphasize, the estimator in a FRD setting is equivalent to that of a Two Stage Least Squares (2SLS) procedure. The implementation proceeds by using an indicator of whether the most voted party had more than 50% of the votes as an instrument for the majority status and applying local linear regressions to observations located around the discontinuity threshold. The first and second stage can be respectively represented by equations 4 and 5 in the following manner:

$$Maj_{it} = \alpha + \beta_1 vshare_{it} + \beta_2 vshare_{it} * Above_{it} + \gamma_t + \epsilon_{it}, \quad vshare_{it} \in [0.5 - b, 0.5 + b] \quad (4)$$

$$Y_{it} = \lambda_0 + \lambda_1 \hat{Maj} + \tau vshare_{it} + \gamma_t + \mu_{it}, \quad vshare_{it} \in [0.5 - b, 0.5 + b] \quad (5)$$

where  $Maj_{it}$  is an indicator equal to 1 if municipality  $i$ 's mayor rules under majority,  $vshare_{it}$  is the vote share it received in the previous election,  $Above_{it}$  is an indicator variable equal to 1 if the most voted party received more than 50% of votes, and  $\gamma_t$  represents year fixed-effects to control for aggregate shocks. The bandwidth around the discontinuity to which the sample is restricted is denoted by  $b$ .

While the external validity is limited *a priori*, since the analysis is strictly local, the internal validity of the FRD strategy depends on the assumption that municipalities on both sides of threshold are similar in terms of baseline pre-treatment covariates except for treatment probability. Balance tests are presented in the appendix for three different bandwidths, 3%, 5% and 10%. Overall balance on pre-treatment covariates is attained for bandwidths of 3% of the vote share, although such a restriction to our sample limits our analysis, as only 27 coalitions and 300 majorities are considered. Other assumption is that there should be no direct effect of the vote share on the outcome variable at the 50% threshold, which Figure 4 has previously confirmed.<sup>24</sup>

<sup>23</sup>Unlike in the sharp regression discontinuity, in the fuzzy regression discontinuity the probability of treatment does not need to jump from 0 to 1 around the threshold, but we need only observe a positive jump in the probability. In this setting, we observe a jump from a positive probability before the 50% vote share threshold to 1 after it. Garmann (2014) refers to it as a “kink”.

<sup>24</sup>We choose not to center the assignment variable around the discontinuity threshold 0.5 as Garmann(2014).

Table 9: Fuzzy RD – Local Linear Regression Results

<i>Bandwidth</i>	47%-53%
Majority	4.13*** (1.48)
Observations	1527

**Notes:** Regression includes year fixed effects. Robust standard errors presented in parentheses. Significance levels: 1%\*\*\* 5%\*\* 10%\*

Table 9 presents the results of the local linear regression expressed by 5. Employing a FRD strategy to municipalities within the 3% vote share bandwidth, we find a positive significant effect of majority governments, which confirms our results in Section 6. A first-stage F-stat of 1.48 shows that we may be faced with a weak instrument problem.<sup>25</sup> It is noteworthy that this evidence in favor of a causal impact of majorities is obtained with quite a narrow bandwidth and, consequently, a small number of observations which could *a priori* undermine the significance of the estimation.

## 8 Conclusions and Limitations

The objective of this study is to investigate whether absolute majorities spend less than coalition governments, as predicted by theory. Applying a two-step methodology which involves the exploration of discontinuities in government type – the ability to form a majority government is determined by the ability of the winning party to earn the last seat that guarantees majority in the Council (just majority) – and government type variations around that discontinuity threshold, we are able to infer causality.

Focusing on portuguese municipalities’ investment between 1993 and 2012, we find consistent evidence that, contrary to theoretical predictions, just majorities in the City Hall Council increase their investment levels relative to just coalition governments. Results are statistically significant and economically relevant, with average investment increases of 8% to 13%, depending on the specification. The result is not driven by large cities nor ideological orientation of incumbents, and the relationship between executive and legislative power in municipalities does not seem make a difference.

Furthermore, the results are robust to vote share bandwidth reductions to confirm

<sup>25</sup>First Stage Regression shown in Appendix. Note that the coefficients are almost symmetric and that the coefficient on  $vshare_{it}$  is positive and the coefficient on  $vshare_{it} * Above_{it}$  is negative which is in line with our predictions as, above the threshold, additional vote share does not significantly impact the probability to become a majority as it already is 1. The sum of both coefficients is close to 0.



close elections analysis. The effect is driven mostly by increases in municipalities that become just majorities as municipalities remaining majorities do not significantly increase their investment levels relative to those who become just coalitions over an election. The investment increase by just majority governments is further enhanced by the vote share earned in the previous election, suggesting that additional political capital intensifies the effect. Preliminary evidence using a fuzzy regression discontinuity design further confirms our results.

It is important to emphasize that our results are local and mean that it is the last seat earned that induces an investment increase relative to the case where the winning party is not able to earn that seat. Furthermore, we do not elaborate any statement on the relative performance of majority and coalition governments. Our analysis focuses solely on the expenditure side, and populations' welfare also depends on the efficiency and quality of public good provision, the relationship between both measures and the expenditure composition.

A major limitation to our study is the few government type transitions and the fact that the local political landscape is vastly dominated by majoritarian governments through the whole period. Although we are able to attain consistent statistical significance across specifications, estimation method possibilities and choices are limited *a priori* by the nature of our data. The existence of infinitesimally close elections (1% or 2% vote bandwidths) with enough variation in outcomes would be ideal but is not possible due to the reduced number of seats into which votes are translated (5 to 17).

This work project opens scope for further research to investigate which components of investment are more impacted by the effect (total investment is analysed) and calls for the development of alternative theoretical mechanisms explaining the increase in investment by absolute majorities. We lay some possibilities we consider plausible and worth investigating: (1) Differences in the ability of majorities and coalitions to make use of political business cycles to influence re-election possibilities (Veiga and Veiga, 2007a); (2) The effect of holding majority on governments' intentions to take advantage of incumbency to overinvest in their preferred items; (3) The possibility of veto from coalition members leading to mutual blocking of proposals and underimplementation of projects.

Investigating the possible existence of a non-monotonic effect throughout the vote share distribution is a final suggestion. To understand how the different combinations of political capital by different parties in a coalition relate to the different relations of forces among them and different fiscal outcomes they yield would constitute value-adding contributions.

# Appendix

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Table 10: Vote Share Bandwidth - 47%-53%

	Coalition	Majority	Difference
Total Population	45162.15	33485.95	11637.06
PopShare 65+	0.209	0.209	-0.000
Nr of Seats in Council	4.09	3.54	0.55
Coastal	0.29	0.18	0.11
Observations	27	300	

**Notes:** Baseline pre-treatment covariates measured in 1994, 1998, 2002 and 2006. Significance levels: 1%\*\*\* 5%\*\* 10%\*

Table 11: Vote Share Bandwidth - 45%-55%

	Coalition	Majority	Difference
Total Population	55755.75	32034.63	23721.13***
PopShare 65+	0.203	0.210	-0.01
Nr of Seats in Council	7.23	6.70	0.529**
Coastal	0.37	0.18	0.19***
Observations	53	463	

**Notes:** Baseline pre-treatment covariates measured in 1994, 1998, 2002 and 2006. Significance levels: 1%\*\*\* 5%\*\* 10%\*

Table 12: Vote Share Bandwidth - 40%-60%

	Coalition	Majority	Difference
Total Population	59173.82	34262.62	24909.20***
PopShare 65+	0.194	0.208	0.015**
Nr of Seats in Council	7.42	6.72	0.70***
Coastal	0.37	0.20	0.17***
Observations	90	721	

**Notes:** Baseline pre-treatment covariates measured in 1994, 1998, 2002 and 2006. Significance levels: 1%\*\*\* 5%\*\* 10%\*

Table 13: Fuzzy Regression - First Stage

$vshare_{it}$	3.75*** (0.90)
$vshare_{it} * Above_{it}$	-3.66*** (0.89)
Observations	1527
F stat	1.48

**Notes:** Regression includes year fixed-effects. Robust Standard Errors presented in parentheses Significance levels: 1%\*\*\* 5%\*\* 10%\*